

Amendments to the Claims

This listing of claims will replace all prior listings of claims in the application.

Listing of Claims

1. (Canceled)

2. (Currently Amended) The electron bombardment heating apparatus, as described in the ~~claim 1~~claim 9, wherein said ~~heated material~~ supporting member is made of ceramic.

3. (Currently Amended) The electron bombardment heating apparatus, as described in the claim 2, wherein said ~~heated material~~ supporting member is made of silicon carbide impregnated with silicon.

4. (Currently Amended) The electron bombardment heating apparatus as described in the ~~claim 1~~claim 10, wherein a heat-resistive insulator plate is inserted between the plural ~~pieces of said~~ reflectors.

5. (Original) A temperature controlling apparatus for an electron bombardment heating apparatus, for controlling temperature due to heat generation of a heating plate in the electron bombardment heating apparatus, in which the heating plate is heated through impingement of accelerated thermions emitted from a filament thereupon, comprising:

an electric power adjuster for controlling filament electric power to be supplied to the filament;

an emission current adjuster, for measuring emission current flowing between the filament and the heating plate, and for outputting a measurement value of the emission current to said electric power adjuster as a control signal; and

a thermal adjuster for measuring the temperature of the heating plate and for outputting the measured temperature value to said electric power adjuster as a control signal, wherein either one of said emission current adjuster or said thermal adjuster is selectively exchanged to be connected with the electric power adjuster, by means a switch.

6. (Original) The temperature controlling apparatus for an electron bombardment heating apparatus, as described in the claim 5, wherein the switch is changed over upon a fact that the measured temperature value, which is measured by means of said thermal adjuster, reached to a preset temperature that is set in advance.

7. (Original) A method for controlling temperature due to heat generation of a heating plate for use in an electron bombardment type heating apparatus, in which the heating plate is heated through impingement of accelerated thermions emitted from a filament thereupon, including therein an electric power adjuster for controlling filament electric power to be supplied to the filament, comprising the following steps of:

controlling emission current to be a preset value by means of said electric power adjuster, while measuring the emission current flowing between the filament and the heating plate by means of an emission current adjuster, when the temperature of the heating plate rises up; and

controlling the temperature of the heating plate to be a preset temperature by means of said electric power adjuster, while measuring the temperature of the heating plate by means of a thermal adjuster, after the temperature reaches to a preset control temperature or temperature a little bit lower than the preset temperature.

8. (Original) The method for controlling temperature for an electron bombardment type heating apparatus, as described in the claim 7, wherein exchange between the

emission current adjuster and the thermal adjuster is conducted by means of a switch, when the measured value of the temperature of the heating plate by means of the thermal adjuster reaches to a preset temperature which is set in advance.

9. (New) An electron bombardment heating apparatus for heating a material, comprising:

a filament for emitting thermions therefrom;

means for accelerating the thermions emitted from the filament towards a heating plate;

a heating plate which is heated by bombardment of the accelerated thermions and serves as a means for supporting the material to be heated; and

a supporting member having the heating plate provided at a top portion thereof, vertically disposed cylindrical peripheral wall portions which have a different diameter from each other and a horizontally disposed annular wall portion which extends in a radial direction and connects the vertically disposed cylindrical peripheral wall portions with each other.

10. (New) The electron bombardment heating apparatus of Claim 9, additionally comprising plural reflectors provided at a rear side of the filament.

11. (New) The electron bombardment heating apparatus of Claim 9, wherein the vertically disposed cylindrical peripheral wall portions comprise an upper vertically disposed cylindrical peripheral wall portion and a lower vertically disposed cylindrical peripheral wall portion and the upper vertically disposed cylindrical peripheral wall portion has a greater diameter than the lower vertically disposed cylindrical peripheral wall portion.